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## PRACTICAL APPLICATION OF THE VAGINAL SMEAR AS A METHOD IN CLINICAL GYNECOLOGY\*

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### INTRODUCTION

Since the original paper in 1933 on cyclical changes occurring in the vaginal mucosa, the study of this specialized field has gone a long way. Great advances have been made in laboratory techniques for the study of endocrine function, and in the detection of malignant cells. It is not the purpose of this paper to dwell on methods and techniques. Suffice it to say that we are using a modified trichrome stain, very similar to that outlined by Papanicalou and Shorr. Our purpose here is to outline the practical application of the vaginal smear as a method in Clinical Gynecology.

### EXPOSITION

In the past year we have studied the vaginal cytology in over 500 cases in our wards and out-patient department. We have found that it has contributed much in evaluating many problems.

The cells normally found in the vagina may be regarded as representing the end-point effect of estrogen and progestin function. A normal vaginal smear presupposes normal function of gonadatropins, anterior pituitary-like hormones, and contributing endocrine substances as the keto-steroids and thyroid hormone. The vaginal smear may be utilized therefore in (1) the diagnosis of endocrine states; (2) the control of treatment with en-

docrine products; (3) as an adjunct in the study of obstetrical problems; (4) as an aid in deciding an indicated certain surgical procedure. Aside from the endocrine importance of the vaginal smear method, its use in detecting malignancy of the uterus presents a fifth (5) important group.

### 1. The Diagnosis of Endocrine States:

A. *Ovulation*—Of the normal endocrine states, the one factor of practical importance is the determination of ovulation time, an important factor, particularly in the study of sterility problems. The diagnosis of ovulation by the vaginal smear method is based on the finding of cells mirroring the height of the follicular phase plus early progesteric phase. These cells are mainly those of the acidophile superficial type, with few of the basophilic superficial type, containing small, pyknotic nuclei, and granular cytoplasm with folding edges. They occur in large clumps and no polymorphonuclear leukocytes are seen.

Since all our functional smears were studied in relation to the date of the last menstrual period, it was easy to correlate ovulatory smears with date. Ovulatory smears were common from the seventh to twentieth days. At first this was quite confusing, but in the light of the recent work of Bremer and Jones,<sup>1</sup> it is quite explainable. These men have shown by the study of the age of corpora lutea obtained at laparotomy, that ovulation may occur between the eighth to nineteenth day. Since all methods of determining ovulation are of necessity indirect in type, we feel that the study of ovulation by the vaginal smear, although also an indirect method, should be used as an adjunct to the other methods.

B. *Menopause*—Of the abnormal endocrine states, the one of most common occurrence in our series is that of hypo-estrogenism, occurring as a result of menopause. It is of common observation to those working with vaginal smears that menopausal smears show a great variation in type depending on the estro-

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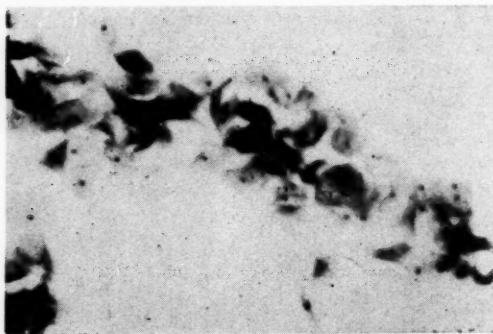


Fig. 1. Ovulatory Smear. Cells are almost entirely of the superficial-type. The majority are acidophilic, but there are also present about twenty-five percent basophilic staining cells.

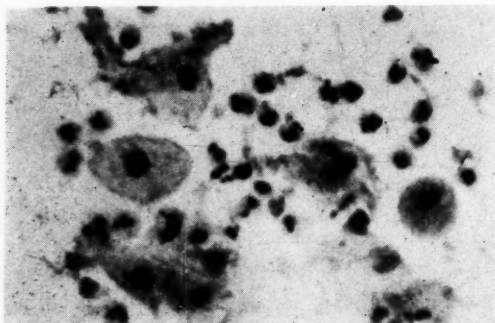


Fig. 2. Menopausal smear, atrophic type. Cells are from outer and inner basilar layers of vagina, and basophilic in staining quality. Note the predominance of polymorphonuclear leucocytes.



Fig. 3. Pregnancy Smear. This routine smear, done on a case of fibromyoma uteri, gave the only clue to a possible concomitant pregnancy. Diagnosis of pregnancy was later confirmed by Friedman test.

gen saturation. From a practical standpoint it is important to know whether a deficiency is present and if so, to what degree. This can easily be determined. The most severe hypo-estrogen state will be revealed by a completely atrophic smear, consisting of cells of the outer basilar type, basophilic in staining, and with the presence of many polymorphonuclear leu-

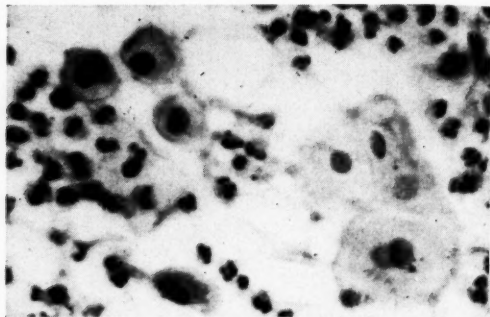


Fig. 4. Incomplete Abortion. Note typical "pregnancy cells" and exudate. In color the cells are mainly basophilic with an acidophilic tinge.

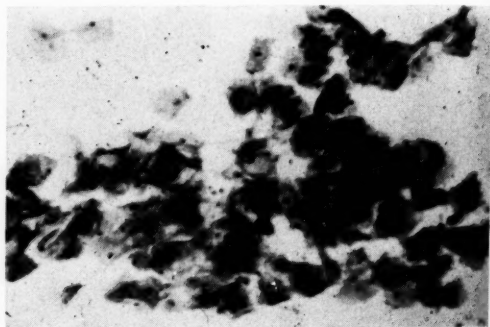


Fig. 5. Case of hypothyroidism before thyroid. Almost all cells are basophilic superficial type.

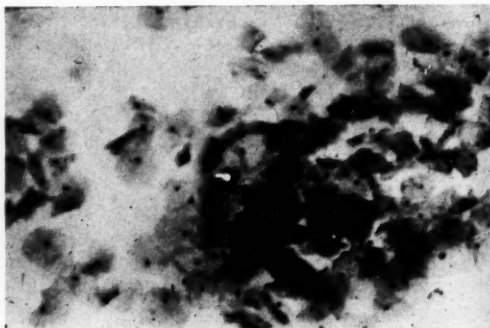


Fig. 6. Following thyroid therapy. Light colored cells represent acidophilia (originals in kodachromes). Dark stained cells are basophilic. Acidophilia represents an increase in estrogen effect.

cocytes. Lesser deficiencies show cells of the intermediate and superficial type with more acidophilia and less polymorphonuclear leucocytes.

*C. Other Hypo-estrogen States*—In our series we have had several cases of functional amenorrhea and hypomenorrhea showing the typical changes of hypo-estrogenism.

One case of masculinizing tumor of the ovary showed a completely atrophic smear.

D. *Functional Bleeding*—Hyperestrogen smears were found mostly in cases of functional bleeding. Slides of these cases show the presence of practically one hundred per cent acidophilic superficial type cells, with marked nuclear pyknosis, granular cytoplasm and curled edges; and the complete absence of polymorphonuclear leukocytes. Red blood cells may be present if the patient is bleeding.

## 2. The Control of Treatment with Endocrine Products

A. The most important use of the vaginal smear in respect to treatment is its application to menopausal therapy. The most severe hypo-estrogen state can be followed to a saturated estrogen phase by watching the developmental changes in the vaginal smear, while undergoing treatment. This is an important procedure in all patients receiving estrogen therapy, for several reasons: First, it prevents an overdosage of estrogen and its consequent ill effects; and secondly, it is a means of differentiating true menopausal syndrome due to estrogen deficiency from psychoneurosis. Patients whose symptoms continue in spite of a saturated estrogen smear must be considered psychoneurotic. Increasing estrogen dosage *empirically* is not only useless but dangerous since there is evidence suggesting that its indiscriminate use may be carcinogenic.

B. We have demonstrated also that certain estrogen deficient states show an improvement in smears following the administration of thyroid extract. This is a recent observation and has been noticed in several cases of secondary amenorrhea and hypomenorrhea. We shall show slides of the smears before and after thyroid therapy showing definite increased estrogen effect.

## 3. As an Adjunct in the Study of Obstetrical Problems

That definite changes are noted in the vaginal smears of pregnant women is not an original observation with us. However, we have found it an interesting adjunct in our routine studies. In normal pregnancy the vaginal epithelium undergoes marked proliferation, particularly of its intermediate zone. This is reflected in the vaginal smear as an

increase in the progestin reaction, since the estrogen reaction is subdued. As a result the normal pregnancy smear is characterized by groups of cells of the basophilic superficial type and of the basophilic intermediate type occurring in dense clumps. Although we do not offer the vaginal smear as a method of diagnosing pregnancy, we do feel that in many cases it may lead us to suspect pregnancy. In our series it has been of aid in two cases of fibromyoma uteri occurring in pregnancy and in one case of dermoid cyst incident to pregnancy. In all these cases the vaginal smear gave the clue to the concomitant pregnancy, which were later confirmed by Friedman tests.

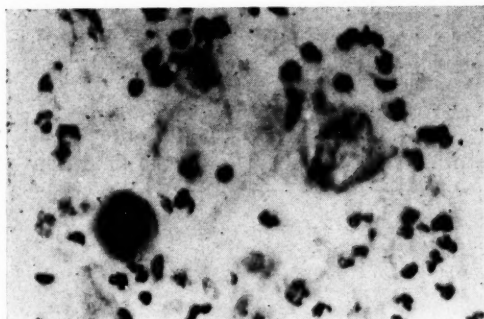


Fig. 7. Masculinizing tumor of ovary. Note evidence of almost no estrogen response.

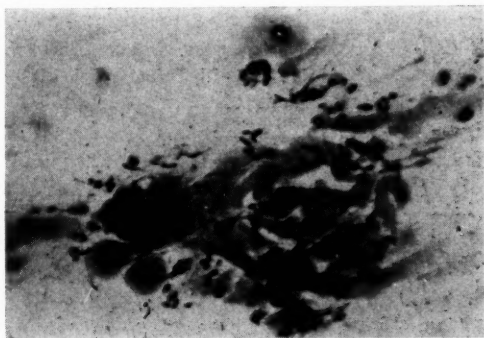


Fig. 8. Adeno-acanthoma of uterus. Diagnosis made originally by vaginal smear. Later confirmed by curettage.

Aberrations from the normal pregnancy smear are also of significance. Most commonly it is seen as an increase in the acidophilic cells, characteristic of abortions and ectopic pregnancies. Differential count of the slides of 76 such cases in this series revealed a mean average of 55% acidophilic cells to 45% basophilic.

#### 4. Influence on Surgical Procedure

Knowledge gained from vaginal smears will very frequently influence surgical judgment, especially in the problem of conservation of adnexa. It is the tendency to exercise the policy of adnexal radicalism when performing surgery on women past the age of 40 years. This is based on the premise that menopause would soon ensue and ovarian function would be lost anyhow. In light of the recent work of Mackenzie, Wetchler et al.,<sup>2</sup> it seems necessary to revise this policy. These workers have shown that only 37% of menopausal women exhibit an atrophic smear. The remaining 63% do have considerable estrogen secretion for a considerable length of time. It appears logical to practice the policy of conservation of adnexae in those women which do not show an atrophic menopausal smear pre-operatively.

#### 5. Detection of Malignancy

The final group where the vaginal smear method was applied was in the detection of

which the diagnosis of malignancy was suspected on clinical findings or history. The correlation between positive smears and positive biopsies was almost 100%. In two cases the diagnosis was made before biopsy or curettage—one an epidermoid carcinoma of the cervix, and the other an adeno-acanthoma of the corpus.

The diagnosis of malignancy is based on finding abnormal cells, the characteristics of which depend upon the amount of differentiation of the tumor. In general, however, all malignant cells have certain common characteristics. They usually occur in clusters, are unequal in size, shape and staining reaction. The nucleus is large in proportion to the remaining cytoplasm and is often irregular in form or fragmented, and the chromatin is distributed in clumps or strands. Nucleoli and mitosis may or may not be seen. A representative slide will be shown herewith.

#### CONCLUSION

In summation, we have given a preliminary report of our conclusions of the value of the study of vaginal cytology, based on over 500 cases. We have found this method of great value:

- 1 In the study of the menopause, functional amenorrhea, hypomenorrhea, and masculinizing syndromes.
- 2 In determining the time of ovulation.
- 3 In the control of treatment of the menopause, especially in its relation to psychoneurosis.
- 4 In studying the effect of thyroid in increasing estrogen in certain cases of functional amenorrhea and hypomenorrhea.
- 5 As a lead in establishing a diagnosis of pregnancy when fibroids or ovarian neoplasm occur as complications.
- 6 As an adjunct in the study of abortions and ectopic pregnancies.
- 7 In influencing the decision of adnexal conservation versus radicalism in surgery of the menopause or approaching menopause.
- 8 In the early diagnosis of uterine cancer.

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The authors wish to acknowledge the technical aid of Elizabeth Bachelis, B. A.

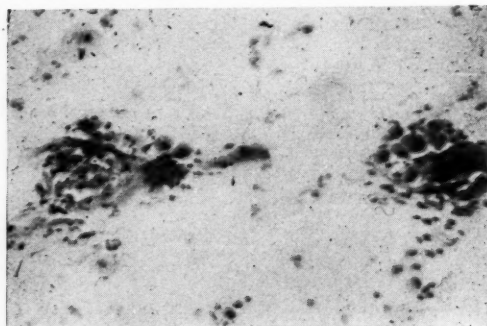


Fig. 9. Adenocarcinoma of fundus uteri.

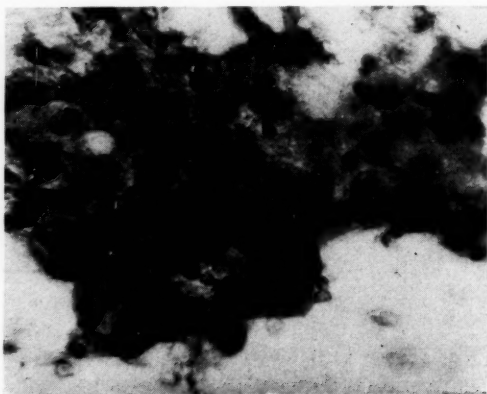


Fig. 10. Squamous cell Carcinoma of Cervix. malignant cells. We have not used this as a screening method, but have selected cases in



**ACUTE LYMPHOCYTIC CHORIO-MENINGITIS\***

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The following case is of interest because of its relative infrequency and the problems that are posed in making a differential diagnosis.

**CASE REPORT**

Mrs. C. J. White, aged 26 years, was admitted to the Hospital on May 14, 1947, with chief complaints of violent abdominal cramps, headache and vomiting. The family and past histories are irrelevant with the exception of an attack of grippe two weeks before the onset of the present illness, which began May 10, 1947, with severe headache in the temporal region which moved to the occiput and vertex. The same day menstruation began at the expected time. Three days later she experienced abdominal cramps and began to vomit and was unable to retain food.

Physical examination showed a well developed, well nourished white woman who appeared moderately ill. The sensorium was clear. There was no rash on the skin; the scalp was sensitive to pressure but otherwise normal. The conjunctivae were slightly injected around the cornea. Pupils were equal, regular, and reacted to light and accommodation. The extraocular muscles reacted normally. The nose showed no discharge. The tongue showed a whitish coating, and projected in the mid-line. The pharynx was moderately reddened but the oral mucous membranes were otherwise normal. There was slight enlargement of the anterior cervical lymph nodes. The thyroid gland was not enlarged and showed no abnormal masses. The breasts were normal on palpation. Lungs were clear and the heart sounds were normal. The abdomen was slightly distended and tender in both lower quadrants, but there was no rigidity or abnormal masses. The liver was palpable 1 cm. below the right costal margin and was not tender. The spleen could not be felt. The genitalia were normal externally and there was moderate vaginal bleeding, apparently due to menstruation. The extremities were normal.

Neurological examination showed marked nuchal rigidity with bilateral Kernig's and Brudzinski's signs. The patellar reflexes were bilaterally increased. There was no evidence of paresis of the voluntary muscles and no signs of cranial nerve involvement. The temperature was 101°F, pulse 110, and respirations 22; blood pressure, 115/70. The impression was an acute meningeal infection. A spinal tap was done, the fluid was apparently under increased pressure though no reading was made. The fluid was ground glass in appearance.

*Subsequent Course and Treatment.* Because of the turbidity of the spinal fluid the patient was started on penicillin, 30,000 units every three hours; also an intravenous infusion of 2000 cc. of 5% glucose in saline with 2.5 grams of sodium sulfadiazene, 2 ampules Solu-B and 200 mgm of ascorbic acid. The sulfadiazene was continued in the form of 1.0 gram every four hours by mouth with an equal dose of sodium bicarbonate. The day following admission, May 15, the patient was drowsy and appeared toxic. There was epistaxis from the right nostril. The stiffness of the neck was much more marked. Nausea and vomiting was persistent and severe. The temperature rose to 102.4°F. On May 16 there was slight improvement in the patient's condition. Another spinal tap was done at this time and showed apparent increase in pressure, with the fluid deeply turbid and slightly xanthochromic.

*Laboratory Studies.* The spinal fluid on admission showed innumerable lymphocytes but no organisms on smear; a cell count was not done. The following day the spinal fluid showed that Pandy's test was increased. The cell count was 1084 per 9 mm., and were entirely lymphocytes; there was an occasional red cell but no organisms seen by smear; spinal fluid culture eventually showed no growth.

The blood count was 4,010,000 red cells; 12,500 white cells; hemoglobin 81% Sahli; the differential white cell count was 64% polymorphonuclear and 36% lymphocytes. The urine showed heavy traces of albumin and sugar, with many red blood cells and a few white blood cells.

Because of the absence of a definite bacterial infectious process the administration of

\*Read before Medical Society of Delaware, Wilmington, October, 14, 1947.

penicillin and sulfadiazene was stopped on the third hospital day. The temperature dropped by lysis and became normal on the seventh day. Headache, nausea and vomiting persisted until the fifth day when the patient could take and retain fluids. Supportive treatment by intravenous infusions was continued until the fifth day. The patient was discharged on the eighth day apparently well. When seen three weeks later no findings suggestive of meningeal disease were noted. The blood Wassermann done at this time was also negative.

#### DISCUSSION

Since the prognosis of lymphocytic choriomeningitis is usually good the chief interest in this condition is the necessity of ruling out other diseases which show a similar initial picture but eventually have a much graver prognosis. Among these are pyogenic meningitis, rabies, epidemic encephalitis, post-infectious encephalitis such as occurs in measles, chicken-pox, small-pox, anti-rabies treatment

following vaccination, equine-encephalomyelitis, the St. Louis type of encephalitis, acute anterior poliomyelitis, tuberculosis meningitis, syphilitic meningitis, brucellosis meningitis, torulosis, toxoplasmosis and various bacterial infections especially in pneumonia, tonsillitis, scarlet fever and middle ear infection.

Lymphocytic chorio-meningitis occurs in several clinically recognizable forms of which the case described lies in one group. Another form is that in which encephalitic symptoms predominate and the meningeal signs are minimal. Several fatal cases of this group have occurred in which hyperpyrexia, marked leukocytosis and evidence of widespread brain involvement were manifest. A third form shows a grippelike infection with moderate fever, gradual or acute onset, with malaise, headache, pains in the back or extremities and arthralgia. The fever lasts about a week; there are no signs of meningeal involvement. The diagnosis can only be made by specific laboratory tests. It is of interest to note in

#### Differential Diagnosis in Acute Lymphocytic Choriomeningitis

|  | Cerebro Spinal Fluid |                    |  | Globulin and Sugar                                   |                     | Virus Serum              | Comple-          | Pathognomic Features                                       |
|--|----------------------|--------------------|--|--|---------------------|--------------------------|------------------|--|
|  | Appear-<br>ance      | Cell-<br>count     | Differential   | norm. avg<br>24 gm%                                  | norm. avg.<br>65 m% | Neutraliz-<br>ing Bodies | ment<br>Fixation |  |
| Pyogenic Meningitis  | turbid               | 50-2000            | polymorpho-<br>nuclears  | sugar absent<br>globulin increased                   |                     | —                        | —                | Organism in smear<br>or culture                            |
| Rabies   | clear                | 0-100              | "  |  |                     | +                        | +                | History of dog-bite  |
| Epidemic Encephalitis  | clear                | 10-100             | Mononuclear  | increase globulin<br>sugar & chlorides<br>normal     |                     | —                        | —                | Cranial nerve palsies<br>late sequels                      |
| Post-infectious Encephalitis as Measles, mumps, chicken-pox, anti-rabies treatment vaccination | Clear                | 10-100             | "  | increased globulin<br>sugar normal                   |                     | —                        | —                | History of specific<br>acute infection                     |
| Lymphocytic choriomeningitis   | slightly<br>turbid   | 10-1000            | small<br>mononuclears  | "  |                     | +                        | +                | Sporadic-benign course                                     |
| Equine Encephalomyelitis East West   | slightly<br>turbid   | 50-2000<br>50-2000 | polymorpho-<br>nuclears  | marked incr. glob.<br>sugar normal                   |                     | +                        | +                | High mortality in<br>epidemics                             |
| St. Louis Encephalitis   | clear                | 50-500             | mononuclears   | sl. incr. glob.<br>sugar normal or<br>slightly incr. |                     | +                        | +                | Moderate mortality<br>in epidemics                         |
| Acute Anterior Poliomyelitis   | clear                | 0-2000             | polys then<br>mononuclears                                       | usually incr.<br>sugar normal                        |                     | +                        | +                | Epidemic form with<br>peripheral or<br>bulbar paralysis    |
| Tuberculous Meningitis   | clear                | 50-5000            | lymphocytes<br>reduction in<br>sugar content<br>Coag. on standg. | incr. globulin<br>sugar reduced                      |                     | —                        | —                | Acid fast bacille by<br>smear or guinea pig<br>inoculation |
| Syphilitic Meningitis  | clear                | 100-5000           | lymphocytes  | incr. globulin<br>sugar normal                       |                     | —                        | —                | Serologic tests<br>Therapeutic test                        |
| Brucellosis Meningitis   | clear                | 100-5000           | "  |  |                     | —                        | —                | Skin test positive<br>Positive cultures                    |
| Torulosis  | clear                | 100-500            | mononuclear  | no incr. glob.<br>sugar normal                       |                     | —                        | —                | Organism in smears   |
| Toxoplasmosis  | clear                | —                  | —  | "  |                     | —                        | —                | Complement fixation  |
| Lead Encephalitis  | clear                | 0-50               | lymphocytes  | marked incr.<br>in globulin                          |                     | —                        | —                | History of<br>exposure to lead                             |

Adapted from Hyman: An Integrated Practice of Medicine.

the case described that an attack of 'grippe' occurred about two weeks before the onset of meningeal symptoms.

Armstrong in 2000 human serums collected at random found 11% had neutralizing antibodies for chorio-meningitis virus with very few of this group giving histories suggesting central nervous system disease, so that it is possible that cases of 'grippe' or 'influenza' in inter-epidemic periods may represent infection of this type. A fourth form has caused several fatal cases of virus pneumonia in which the pneumonitis was caused by the specific virus.

The *laboratory diagnosis* can be made by inoculation of blood or spinal fluid into mice or guinea pigs and the production of the specific infection in these animals. This is characterized by pneumonia, focal hepatitis and death in 9 to 16 days after intra-peritoneal inoculation. The virus is present only in the first few days of the patient's illness. It is only by the isolation of the virus or the development of anti-bodies that a positive laboratory diagnosis can be made. Following recovery the patient develops complement fixation and virus neutralizing anti-bodies. The former persist for a few months while the latter appear about two months after the onset of the disease.

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Brenneman: Practice of Pediatrics, Vol. IV, Chap. 8, 68-69.

#### DISCUSSION

DR. O. J. POLLAK (Wilmington): Dr. Williams' paper was good; in fact it was too good; he didn't leave much for me to discuss. To the many types of meningitis shown in the table one could add Wallgren's aseptic lymphocytic meningitis some cases of which have been proven to be chorio-meningitis; and further, Bouchet's swineherd's disease which is caused by a different virus. That does not mean that swineherds cannot come down with lymphocytic chorio-meningitis. Nothing can be added to the clinical signs and symptoms. Neurologic and psychiatric manifestations are those of meningitis.

I was interested in Dr. Williams' report of initial findings of polymorphonuclear leukocytes in the cerebrospinal fluid of his patient.

On occasions I had made the same observation when the tap was done within the first three days of the illness. Lymphocytes appear suddenly on the fourth day. There is no note on this phenomenon in textbooks. Anatomic pathologic findings are scanty. Few patients died and came to autopsy. Our knowledge is based chiefly on examination of the brains of monkeys. The choroid plexus is thickened and infiltrated with lymphocytes. Exudate might be found in the ventricles and foci of lymphocytes may be present in the pia water and around the vessels of the white matter of the brain.

The epidemiology of lymphocytic chorio-meningitis has been studied by Armstrong and by Augustin. In almost every instance of the disease was there contact with mice, and 52% of mice in patients' homes were found to be active carriers of the virus. Laboratory workers handling mice fell ill with the disease. Apparently, the virus enters the human body by the respiratory tract. Contact infections from man to man are not known. Various species of animals are susceptible to infection: many strains of mice and rats, guinea pigs, dogs, and monkeys. There might be other sources of human infection than mice. The course of the disease is mostly acute, but I remember a patient whose illness lasted, with mild remissions, for seven months.

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The curious thing is that legislators—and for that matter people generally—seem to feel that tuberculosis is someone else's disease and is paid for by the victim and his family. The idea is completely wrong. Tuberculosis has to be paid for by society. The only choice is how the bill will be paid. James H. Hutton, M. D., Illinois M. J., Apr., 1947.

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It is short-sighted to spend a great deal of time and money in developing an excellent medical program for the treatment of tuberculous patients without at the same time providing some form of supervised activity for patients with a favorable prognosis to enable them to bridge the gap between the sheltered life in a sanatorium and the life of the work-a-day world. Ernest S. Mariette, M. D., Am. Rev. Tuberc., Jan., 1947.

## CHRONIC INTESTINAL UPSETS DUE TO AMEBIASIS\*

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In the past two and one-half years we at Beebe Clinic, the Post Dispensary and the Station Hospital, Fort Miles, Lewes, Delaware, have seen a goodly number of chronic tropical diseases contracted by Army personnel while on duty in the Pacific, Mediterranean, and Caribbean theatres of operation during World War II. These conditions have included malaria, schistosomiasis, hepatitis, a chronic eozematoid dermatitis or the so-called "jungle rot", and a recurrent intestinal upset which has the appearance of an indeterminate ulcerative colitis. However, these intestinal upsets have been proven to be due to an amebic infestation, or else have made a dramatic response to anti-amebic therapy. This paper is limited to a discussion of the amebic diseases found.

One should not only be constantly aware of a tropical disease in overseas veterans who present unusual symptoms, but should also be on the lookout for amebic infestation in those who present the picture of chronic gastrointestinal upsets described below. All too often these patients are diagnosed as an indeterminate ulcerative colitis or a chronic gastroenteritis and are given a course of antispasmodics, sulfonamides, bismuth, and psychotherapy, with temporary or no relief.<sup>1</sup>

Unfortunately, the Station Hospital at Fort Miles has been closed and the records of about 25 patients diagnosed and treated there are not available. We wish to present a brief synopsis of symptoms in a group of six patients seen in the past nine months and a brief discussion of the treatment.

This group includes three army men, two navy men, and a negro civilian. Two of the army men were Pacific theatre veterans (one a Japanese prisoner of war) and the third a resident of Puerto Rico. The navy men had Mediterranean service; one served later in the Pacific and the other was stationed in Cuba. The negro, aged 55, had a 10-year history of diarrhea and had traveled thruout the United States.

## SYMPTOMS

All these men presented the same general symptoms. There was a general soreness thruout the abdomen, more especially over the cecum, which was aggravated by the wearing of a tight belt. These men had recurrent bouts of profuse, watery, and occasionally bloody diarrhea, with 8-10 bowel movements daily. This diarrhea lasted 24 to 72 hours. Following the diarrhea there would be a period of relief of 4-7 days, although they continued to have the picture of "irritable colon", with the desire to defecate after the ingestion of food. Two of the men had occasional bloody rectal discharges. At no time did they have chills or fever and, quite surprisingly, all men were well nourished and overweight for their height and age.

We wish to present the history of three of the six cases.

## CASE 1

*History.* E. B., 55-year-old negro male civilian. For the past ten years this patient had recurrent attacks of diarrhea usually lasting two days, with 10-12 bowel movements daily, associated with severe cramps. After these attacks he noticed a bloody rectal discharge, with relief from diarrhea, for 3-5 days. The past medical history was negative, except that he had been treated for ulcerative colitis and had been also told that he had "chronic appendicitis".

*Physical examination.* The patient was a thin, negro male, in no acute distress but very tender over the cecum.

Examination of the stool for ameba was negative. Barium enema showed an irritable colon on fluoroscopy and post-evacuation films showed evidence of ulceration. Sigmoidoscopy showed the typical ulcerations described later, a marked atrophy of the valves of Houston, and an atonic bowel.

In spite of the negative stool examination he was given therapy, as outlined below, with prompt relief of the symptoms in five days. Reexamination in two weeks showed a marked improvement of the rectal mucosa, with only occasional ulcers seen. On a four months' check-up he was having but one formed bowel movement daily, with no cramps after eating.

\*From the Department of Medicine, Beebe Hospital.



## CASE 2

*History.* E. N., a 36-year-old white male, a veteran of the U. S. Navy with service in the Mediterranean and Pacific Theatres. This man gave a history of 30 months duration of recurrent attacks of bloody diarrhea lasting three days, associated with severe cramps, followed by 4-7 days of relief from loose stools, but the continuation of cramps and the desire to defecate 3-4 times daily following food. The history dated from an attack of severe diarrhea while he was stationed in the Philippines.

*Physical Examination.* The patient was an obese white male, with tenderness over the cecum and descending colon as the only positive finding. Sigmoidoscopy showed typical amebic ulcerations and ameba were found on aspirated material. On therapy he made a remarkable improvement and has been asymptomatic for a period of seven months.

## CASE 3

*History.* A. F., 32-year-old W. O. J. G., U. S. Army, a resident of Puerto Rico. This officer gave a history of recurrent attacks of diarrhea for about eight years, with severe cramps and soreness in the epigastrium after eating. Examination for peptic ulcer by x-ray was negative. As he was of a "nervous temperament" he was given sedatives and antacids for several years, with no relief.

*Physical Examination* was entirely negative except for tenderness in the epigastrium. Examination of three warm stools, the third after a saline laxative, finally showed the presence of ameba. The patient refused sigmoidoscopy.

There was marked improvement of the diarrhea after the first course of carbarsone, but there was a recurrence of symptoms two months later. On a repetition of carbarsone, supplemented by emetine hydrochloride gr.  $\frac{1}{2}$  b.i.d. intramuscularly for six days, there was a marked improvement of symptoms, and the patient has been well for six months.

## DIAGNOSIS

Of this group only four had had an immediate examination of a warm stool specimen, and sigmoidoscopy with examination of aspirated material thru the sigmoidoscope. Two were not examined by sigmoidoscopy, as posi-

tive stools were returned and sigmoidoscopy was refused by the patient.

In only one of the four cases was the *Entamoeba histolytica* found on examination of material taken thru the sigmoidoscope. This was attributed to the fact that these men had received a mixture of paregoric and bismuth for an acute attack just prior to the examination, and it seems that bismuth taken by mouth possesses a mild anti-amebic effect. In spite of this, these patients were given a trial course of anti-amebic therapy, as presented later, with prompt relief of the symptoms.

The four who received sigmoidoscopy showed the same findings on examination of the rectal mucosa. This was a typical picture of amebic infestation. Through the rectal mucosa there were small, discrete, punched-out areas of ulceration 4-15 mm. in diameter, with slight redness about the ulcer edge, and occasionally an inflammatory exudate over the ulcer area. Between the ulcers there was sound mucosa with no evidence of an inflammatory reaction. In the negro with a ten-year history the valves of Houston were atrophied and the bowel was very atonic.

Amebiasis is a disease due to the *Entamoeba histolytica* primarily invading the gastrointestinal tract, and can be arbitrarily divided into three groups entirely on a symptom basis. First, the dysentery type which is the acute, explosive onset of a severe bloody diarrhea with twenty or more bowel movements daily, chills, fever, and severe prostration. This occurs in endemic areas and was seen thruout the Pacific, more so in the Philippines, and took a great toll of combat troops. Second, the type discussed in this paper, which is so frequently diagnosed as an indeterminate ulcerative colitis, and treated with diet and antispasmodics, with no or only temporary relief. Third, the carrier type, who is entirely symptom-free, and is usually recognized on a routine stool examination as taken for food handlers' certificates.

In addition to these intestinal complaints, in veterans with tropical service, thought must be given to invasion elsewhere in the body, such as in the liver, gall bladder, lung, or brain. These usually occur in the form of abscesses.

## TREATMENT

In therapy of this condition the following drugs are generally used: First, emetine hydrochloride, gr. T daily, intramuscularly, for 6-8 days. Second, carbarsone 0.25 grams, orally, 2-3 daily for 7-10 days. Third, diodoquin 210 mgms. (3 1/5 grains) three times daily, orally, for ten days. Fourth, a bismuth preparation by mouth. Fifth, sulfadiazine, 1.0 gram, orally, 2-3 times daily for 3-7 days. The sulfadiazine is given to overcome the apparent secondary infection present on the ulcerative site which is apparently the cause of these recurrent attacks of diarrhea.<sup>3,4</sup>

Therapy varies in different clinics but, essentially, emetine hydrochloride is used in the dysentery or abscess forms of amebiasis, and not only does it possess an anti-amebal effect but seems to act as an anti-spasmodic and antipyretic drug. In this series there were seen no cases of these types. Once a diagnosis was made and liver damage ruled out, the patient was started on treatment. A positive stool for ameba is not absolutely required for a diagnosis, as sigmoidoscopy with the finding of the typical ulcers is diagnostic. These patients were started on carbarsone 0.25 grams orally, three times a day and continued on this drug for a period of ten days. At the same time the patient was started on sulfadiazine, 1.0 gram three times daily for the first three days. After the ten days of carbarsone a week of rest from this drug followed, and during this time the patient received sulfadiazine, 1.0 gram twice a day. Following this week of rest another ten days of carbarsone was given by mouth, with reexamination of the patient by sigmoidoscopy at the end of this course. Through this course the patient was given bismuth subsalicylate by mouth.

After the first course of carbarsone and as early as 4-5 days after the onset of treatment these patients noticed marked relief from the cramps which had been present following ingestion of food, and also the disappearance of the soreness. Within two weeks the bowel habit had returned to normal. Reexamination by sigmoidoscopy showed a marked improvement of the rectal mucosa, and in one a complete absence of findings. All these patients have been asymptomatic for a period of 3-9 months.

## SUMMARY

1. The general practitioner is reminded to be aware of amebiasis in patients who present recurrent intestinal upsets associated with diarrhea and cramps.

2. A brief discussion of the symptoms, diagnosis, and therapy is presented.

3. Three case histories are presented of patients presenting different findings: one without a positive stool for ameba, with response to therapy.

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## SOME DEVELOPMENTS IN MILITARY MEDICINE\*

COLONEL WILLIAM S. STONE, M. C.,  
Washington, D. C.

The international situation and its possible implications for the future are adequate cause for all of us to think in terms of national security. Accordingly, I have chosen to review for you some aspects of the Army Medical Department's plans and work in the fields of training and research, and their bearing on the future of professional medicine. The Medical Department of the Army has three broad training missions—they are:

1. The training of Medical Department personnel to render high quality professional care to the Army's routine load of sick and injured.
2. The development of staff, administrative and supply personnel to provide for administration, planning, supply and procurement functions required to run the Medical Department.
3. Military Medicine, which consists of those aspects of professional medical practice peculiar to war, or those aspects whose development will be inadequate for medical practice in war.

The requirements for the first two categories, I believe, are obvious to all, but just what is included in Military Medicine and

\* Read before the Massachusetts Medical Society, Boston, May 25, 1948.

how are the needs in this field determined? This information has been obtained by analysis of manpower losses encountered in past wars; the conditions imposed on medical practice by armed conflict and study of new trends in weapons of war and their possible employment under varying conditions. For example, strategic aerial bombing will greatly modify medical practice for both the military and civilians involved. Specific indications of the problems involved are partially given in the strategic bombing surveys of Germany and Japan following World War II. They reveal that approximately 500,000 civilians were killed by aerial bombing of Germany with tremendous damage to all physical structures and a detrimental effect on disease control. The trend in ratio of death to injury because of aerial bombing reveals not only the effectiveness of this attack but also the fact that conditions were built up which caused not only a breakdown of the defense but also a failure in the medical service available for casualties. During 1940-41 the ratio of wounded to killed in the German army was 8 to 1. By 1943, this had shifted to 5 to 1, and during 1944 and 1945 the records revealed that for every three wounded one was killed. The military authorities attribute this shift entirely to the devastating effect of aerial warfare. It must be remembered that in a great number of instances many were officially reported as missing who actually had been killed (destroyed or buried) by aerial bombardment. Undoubtedly these shifts also prevailed for civilian populations but less accurate figures are available for this category.

In Japan where the atom bomb was used, 70,000 to 90,000 were killed and 100,000 were injured at Hiroshima while at Nagasaki it is estimated that 34,000 were killed and 60,000 injured. Pictures of physical damage caused by these types of warfare readily convey to medical men the magnitude of health and injury problems involved.

1. Losses due to physical or mental defects prior to service in armed forces. Analysis of U. S. Army manpower losses shows that in World War II, with over 14 million Class 1A draftees called by Selective Services, 4,828,000 were rejected for physical or mental defects. This is a rejection rate of approximately 33%,

a very significant figure to be remembered when calculating available manpower.

#### SELECTIVE SERVICE

|  |                 |
|--|-----------------|
| Class 1A draftees called .....                             | 14,484,000      |
| Rejected for physical or mental defects .....              | 4,828,000 (33%) |
| Rejects for mental disease.....                            | 856,200 (18%)   |
| Rejects for mental disease, deficiency or illiteracy ..... | 1,532,500 (32%) |

This rejection rate of 33% is a serious manpower loss from the military viewpoint and every effort is being made by job analysis and proper manpower classification to reduce its magnitude without significantly affecting the quality and usefulness of personnel in the Army.

Other principal causes of manpower loss to the Army were:

2. Battle casualties—During the last war wounded, died of wounds, killed in action and prisoners of war were responsible for only approximately 1/3 of the permanent losses of effectiveness that occurred, the remainder being largely due to sickness and injury.

#### January 1, 1942 — August 31, 1945

|   |         |
|---|---------|
| Killed in Action .....                              | 169,000 |
| Died of Wounds .....                                | 26,300  |
| Declared Dead .....                                 | 12,300  |
| Total Battle Deaths .....                           | 207,600 |
| PW & Internees .....                                | 125,890 |
| Losses due to KIA or W plus PWS .....               | 333,490 |
| Deaths Disease .....                                | 13,800  |
| Deaths Injury .....                                 | 50,100  |
| Total Non-Battle Deaths .....                       | 63,900  |
| CDD for Disability exclusive of Battle Injury ..... | 925,000 |
| Total permanent losses other than battle .....      | 988,900 |

#### 3. MANPOWER LOSSES OTHER THAN KIA\* OR MIA\*\* DURING PERIOD

1942-1945

|   |           |
|---|-----------|
| Total separated from service .....                                    | 1,312,000 |
| Separation on CDD's .....   | 965,000   |
| Separation for inaptness or related causes .....                      | 356,000   |
| Separations on CDD's because of battle or nonbattle injury.... (9.4%) | 90,087    |
| Principal losses due to disease:                                      |           |
| Psychoneurosis .....  | 256,135   |
| Musculoskeletal (mostly low back pain) .....                          | 60,999    |
| Eye, ear, nose and throat .....                                       | 58,715    |
| Psychosis .....   | 54,523    |
| Gastric and duodenal ulcer.....                                       | 50,861    |
| Respiratory, other than the .....                                     | 50,291    |
| Defective and painful feet .....                                      | 37,380    |
| Arthritis .....   | 43,354    |
| Neurological .....  | 33,498    |

\*—Killed in Action

\*\*MIA—Missing in Action

4. Major U. S. Army cause of hospitalization due to disease.

To complete the picture of loss of manpower, we should see what disease conditions were the cause of major losses of time due to hospitalization.

SELECTED CATEGORIES  
DISEASE CASES U. S. ARMY  
1942-1945 Inclusive

|   | Total<br>Cases | Average<br>Cases<br>per Year |
|---|----------------|------------------------------|
| Encephalitis .....                                      | 508            | 127                          |
| Filariasis .....  | 4,036          | 1,009                        |
| Leishmaniasis .....                                     | 346            | 86                           |
| Poliomyelitis .....                                     | 1,326          | 331                          |
| Schistosomiasis .....                                   | 1,636          | 409                          |
| Coccidioidomycosis .....                                | 2,894          | 723                          |
| Malaria .....   | 462,060        | 115,414                      |
| Acute Respiratory Diseases<br>including Influenza ..... | 4,081,533      | 1,021,883                    |
| Diarrhea and dysentery .....                            | 523,211        | 130,802                      |
| Infectious Hepatitis .....                              | 171,691        | 42,922                       |
| Venereal disease .....                                  | 1,071,429      | 267,857                      |
| 1944 1945   |                |                              |
| Amoebiasis.....   | 7,303 26,998   |                              |

It is apparent that acute respiratory diseases, diarrhea and dysentery, malaria and infectious hepatitis (jaundice) were the major problems, while bizarre diseases like schistosomiasis, poliomyelitis, leishmaniasis, filariasis, and encephalitis were of minor importance. Venereal diseases were also of major military importance. During the period of 1942-1945 inclusive, there were 1,071,429 cases of venereal disease in the U. S. Army. Developments in the treatment of venereal diseases reduced the average time lost from 48 days per case in 1939 to 4.5 days per case in 1947. However, in spite of educational efforts and better prophylaxis no such favorable record has been obtained in the prevention of venereal diseases. The prevention of venereal disease involves moral, social and other issues and can not be controlled entirely from the medical approach. However, through cooperation with other agencies involved, progress is being made in this field.

In addition to manpower losses previously experienced, we have to anticipate new problems that may be important in the future, such as: disaster relief in connection with aerial bombing; cold casualties; epidemic disease in the presence of great physical damage to the country and disorganization of health services; radiation casualties from atomic fission products; inadequate nutrition and shortage of

medical personnel, facilities, equipment and supplies. These considerations and those cited above make it obvious that the health and welfare of both the civilian and military populations of the U. S. will be intimately related during any future war. Some of the problems involved can be taken care of by civilian defense preparations, but many of them will have to be solved by the medical services of the armed forces or combined armed force civilian action. At the present time, I believe the known major military medical problems are:

MEDICAL MILITARY PROBLEMS

1. Physical and mental standards for most efficient use of manpower.
2. The prevention and care of casualties due to or complicated by radiation injury due to nuclear fission products.
3. Living and working under conditions of extreme cold.
4. The prevention of cold casualties.
5. The evacuation and medical and surgical care of sick and injured under conditions of extreme cold.
6. Preventive medicine and medical practice in disaster relief.
7. Traumatic surgery, including first aid, resuscitation, operative and postoperative care, and rehabilitation as it applies in war and in disaster relief.
8. Preventive psychiatric and psychological problems required for prevention of psychiatric casualties in war.
9. Control of infectious and parasitic diseases, as required with troops, civilian populations and refugees in war.
10. Nutrition problems of the severely injured and infected.
11. Nutrition problems in handling displaced persons who have undergone starvation, or where inadequate food is available to meet average requirements.

In addition to the action indicated by the above, I believe we are justified in concluding that, contrary to World War II experience, if we are involved in another war there will be great damage to our major population centers at home. Further, that little time will be available for professional medical training or the development of new information once war starts. Therefore, required research, training



and effective organization between civilian and armed force medical services will have to be accomplished prior to war.

The Armed Forces are trying to anticipate these national requirements and undertake, as a result of analysis of previous experience and future needs, research on problems where inadequate information is available. When obtained, this information must be introduced into all undergraduate and postgraduate medical teaching so that all medical personnel (civil and military) are fully informed on available information and trained in medical measures required in war and for disaster relief. For example, when the undergraduate, intern or resident is studying thermal burns or fractures, he should include in his studies those aspects of the problems that would occur in war and in major disasters. Aside from technical matters, consideration should be given to such problems as thinking in terms of not only the individual case but of several hundred or thousands that may be awaiting treatment. Further, that resuscitation preparation, treatment and aftercare will probably be handicapped by primitive facilities and possibly inadequate personnel, supplies and equipment.

I believe it is evident that military medical information, training and procedures required for this type of situation are needed in all fields of medical practice. The Armed Forces are attempting to supply these needs. Evaluations of World War II experience in specific fields will soon be available for inclusion in medical teaching. Research work conducted in service installations and in the field will supplement existing information available. National Defense contractors working in civilian institutions are adding much basic information on specific problems. These medical research efforts are being coordinated by the National Research Council in so far as civilian military relationships are concerned, and by the Research and Development Board of the National Defense Establishment for the Armed Forces.

In the future, professional training in civilian medical services and that of the Armed Forces must be carefully coordinated and in constant working harmony. The Armed Forces medical programs and those of civilian

medicine must contribute much to give all medical personnel the knowledge and technique required for future medical practice. Initial steps are being taken to accomplish these objectives. Much needs to be done by all concerned—the Armed Forces to develop special information, techniques, methods and materials required for medical practice in war—civilian medicine to see that the results of this work are a part of every doctor's training prior to the need for it in war.

### PREVENTIVE MEASURES FOR ATOMIC EXPLOSION\*

MAJOR A. J. BAUER, M. C.

Washington, D. C.

The question as to what would happen to an American city in case of an atom bomb attack I hope will never be answered. Speculations as to the number of casualties produced have varied between 15,000 and 200,000 in a city of a quarter of a million persons. Although these guesstimations vary over a wide range, each speculator can produce a fairly firm basis for his calculations. The above statement may appear ambiguous, but the numerous variables in a calculation of this type dictate such a wide variation in answers. My estimate of casualties falls about midway between the two limits but I refuse to be dogmatic about my selected figure before a group such as this. I feel that we will gain by regressing to the basic facts and draw our own conclusions from our own calculations.

First, as to the weapon as now known, and the possible improvements which may be attained. The only sound basis for the extent of damage produced depends on the destruction inflicted on the Japanese cities of Hiroshima and Nagasaki. The improvement in efficiency attained since the original bombs were detonated is restricted information and not at our disposal. However, we may assume that the upper limits of destruction will not more than double unless some new basic information is uncovered. This assumption may be considered valid because results fall off rapidly with increasing distance. A comparison with the better known results of "HE" bombs demonstrates that two 500 pound bombs do more

\*Read before the School of Public Health, Harvard University, May 26, 1948.

damage than one 1000 pound bomb. Therefore an upper limit of efficient use is placed on any type of detonation unless new concepts of energy production are involved.

Second, how does the vulnerability of an American city compare with that of the cities of Japan? Here we encounter difficulties. One group will argue that American buildings are of sturdier construction and therefore offer better protection against blast damage and fire. A second group insists that our buildings will only furnish more rubble to act as missiles causing increased mechanical injuries.

We should remember that the large buildings in Japan were built to withstand earthquakes and in many cases compare favorably in structural strength with our construction. If our buildings can withstand the original blasts of detonation there is no question that they will furnish protective shielding against radiation damage to personnel. If the buildings topple, or if the veneering is torn off, persons will be covered by this material and the former protection becomes a lethal weapon.

For our speculations, let us consider broad zones of destruction. These readily fall into three. Zone 1, extending out one mile from the center in which destruction is almost complete. Zone 2, extending from 1 to 2 miles, in which there is serious damage with destruction about 50% complete. Zone 3, extending from 2 to 3 miles, in which damage is minor. We can estimate 100% casualties in Zone 1, almost all fatal. 75% of the personnel in Zone 2 will be injured, approximately one-half fatally, so Zone 3 will produce minor casualties.

We now have a degree as to the number of casualties involved. I hope you will agree that it will be in the 10's of thousands. I think that is as accurate as it is safe to limit our plans.

Has this broad limit been of any assistance to us in our planning? Yes, I believe so, because it forces us to one conclusion. We must be prepared to handle casualties on a scale never dreamed of in the past.

How would we like to have the general public prepared for such an eventuality! You as students of preventive medicine are better prepared to answer such question, but I would

like to suggest a few procedures which may be considered. With the large number of burns and mechanical injuries expected, the immunization of the population against tetanus should be considered. Disruption of water supply and sewage disposal systems would suggest immunization against organisms infecting the digestive tract wherever possible along with preparations and instructions in individual water purification.

The demand for blood transfusions suggests the advisability of pretyping the population and devising some method of indicating the individual's type.

Considerable work is being done in the use of drugs as a protection against radiation. So far these experiments have not been conclusive, but future knowledge may well suggest the advisability of incorporating some substance in a common food such as bread.

One important preparatory procedure usually ignored is the psychological preparation of the general public for such an attack. I believe this can be best handled by keeping the public informed as to the possibilities and to our capabilities to handle such disasters. Any false complacency through over-optimism will lead to a severe psychological shock in case of a disaster. On the other hand over-emphasis of the devastation produced may lead to panic.

Since light-colored loose clothing furnishes good protection against flash burns, the co-operation of clothing designers may be important in our plans for preparation.

The special problems involved in handling casualties on the scale expected in an atom bomb attack will center on the treatment of large numbers of patients. Tremendous supplies of drugs, dressings, etc., will be required. One item which will be used in vast quantities will be whole blood. The number of blood transfusions required will be fantastic. The number of blood typings necessary will require some plan whereby laymen trained in blood typing can be utilized. In all probability, laymen trained in taking and administering blood will be used to carry out the transfusing operation.

The plans for caring for these casualties must involve large areas. One definite state-

ment may be made of such plans. The area which each group can ignore in its plans is its own locality. The shocking power and devastation wrought by an atom bomb so disrupts an area that outside help is necessary to carry out operations.

All of the health measures now taken in cases of widespread disaster will have to be instituted in an atom bombing. The only difference being that this disaster will be more widespread and complete than those we now know.

So far, I have not touched on the special problems caused by radioactivity. If the bomb is detonated high in the air, residual radioactivity will not be a problem. Casualties from immediate radiation have in the past comprised between 15% and 20% of the cases treated. A considerably higher percentage received lethal doses of radiation, but these died of other causes. However, a city prepared for an atom bomb attack by protecting the population with sturdy buildings may well furnish us with a larger percentage of patients suffering from radiation illness. Persons behind large thicknesses of concrete may escape injury from flying materials or even gamma radiation, only to receive serious doses of neutrons.

Treatment may be divided into two broad categories. One, those of proven value which consists of good nursing care, blood transfusion, antibacterials, Vitamin C, intravenous glucose and saline.

Two, those of questionable value which consist of vitamin B<sub>6</sub>, toluidine blue, protamine sulfate, rutin, and adrenal cortical hormones.

The large number of cases will require a sorting of patients as to those not treated because of the hopeless prognosis and those who may be helped by therapy. Since a rapid drop in lymphocytes is the best estimate of radiation damage at our disposal, we can predict a large number of white blood counts and differentials being required. Here again laymen trained in this procedure will be necessary.

The most important preventive measure in preparation for an atomic bomb attack is outside of our field. That is a national policy which will make all of our effort superfluous. It is the only true preventive measure, for the power of this weapon is so great that regard-

less of the preparations the casualties will be terrific. However, the effects can be reduced by planning and we cannot afford not to plan as long as any possibility of attack is present.

This plan of emergency operation must differ from any of the past in that it will have to be on a national basis. Cities must plan to handle the emergencies of their neighboring cities. The director of the emergency plan for one city must be a resident in some other community. The neutrons that fission the atoms will force our people closer and closer together.

### MISCELLANEOUS

#### VA Records of Syphilis

It would be deeply appreciated if you would print the following notice in your publication.

"The Veterans Administration has in its custody the majority of syphilis records of those Army personnel who were treated for this disease while in active service, and in many instances can procure informative data from the syphilis records of other than Army personnel. It is thought that many physicians treating veterans for syphilis as private patients would find a resume of the syphilis record useful since the details of treatment, results of spinal fluid examinations, and blood serologies are incorporated in the records.

Resumes of these records are available to physicians who are treating such veterans provided authorization for the release of the data is given by the veteran. Requests for the resumes accompanied by an authorization for the release of the data, dated and signed by the veteran, should be addressed to the Dermatology and Syphilology Section, Veterans Administration, Munitions Building, Washington 25, D. C. It is most important that the veteran's Service Serial Number and other identifying information, such as the date of enlistment, the date of discharge, rank, and organization be included.

Ordinarily, the resumes can be furnished in approximately two weeks from the date of the receipt of the request and signed authorization."

Sincerely yours,

PAUL B. MAGNUSON  
Chief Medical Director

### **Navy's New Medical Training Program**

The Surgeon General of the Navy has announced the expansion of the Bureau's professional training program for reserve and regular medical officers, which is similar to the recently expanded Army medical training program. The object is to permit more Navy doctors to meet the requirements for certification by the various American Specialty boards, and to encourage the young doctor to intern under the auspices of the Navy. The following are the important points in this program:

Graduates of Class A medical schools who have been accepted for internship by a hospital approved for such training by the Council on Medical Education and Hospitals of the A.M.A. may be commissioned as lieutenants (junior grade), MC, USNR, and permitted to continue their intern training. They will receive all the pay and allowance of the rank while so serving. After completing their internships, the medical officers must remain on active duty for a period of one year. If they meet the professional, physical and moral requirements, they will be given every encouragement to transfer to the regular Navy.

Interns who have completed the one year of obligated service, and who have transferred to the regular Navy, may be considered for residency training on a competitive basis with other officer personnel of the regular Medical Corps.

Resident physicians now in civilian hospitals, or those accepted for approved residency training, are eligible for commissions in the regular Navy. Those so commissioned will be assigned to duty, with full pay and allowances, in the hospital in which they are already a resident, or to which they have been accepted for residency training. Every attempt will be made to permit residents holding commissions in the regular Navy to complete their training in event of an emergency.

The Navy has at the present time 400 approved residencies and fellowships in the various specialties recognized by the American Specialty Boards in Naval and civilian hospitals. This educational training involving the 400 residencies is divided into 2 programs.

**Program A:** One hundred of the above-mentioned residencies, courses, and fellowships

will be made available for civilian physicians accepting a commission in the U. S. Navy. An additional 100 civilian physicians will be commissioned in the U. S. Navy and permitted to pursue their own course, fellowship or residency, provided it is approved by the Council on Medical Education and Hospitals of the American Medical Association with concurrence of the Specialty Board. Upon acceptance of the designated training, they will be required to agree to remain in the Navy for a certain obligated time.

If on original appointment a candidate has not been approved for more than one year of training, during his first year of residency training (Program A) he may compete for one of the 300 residencies (Program B) available to the Regular Naval medical officers, and if he obtains such training he will obligate himself to remain on active duty for an additional period depending upon the amount of time spent in training.

**Program B:** Three hundred residencies, fellowships or courses, will be reserved for continuing the Training Program as presently organized for regular medical officers.

The obligated service following graduate medical training (courses, fellowships and residencies) in Naval hospitals is one year for each year of training received.

Information concerning any part of the program may be obtained by writing to the Chief of the Bureau of Medicine and Surgery, Navy Department, Washington 25, D. C.

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Seventy per cent of all new tuberculosis cases discovered by mass x-ray survey are minimal and do not constitute a grievous public health problem. Most of those cases will be noninfectious; the disease process will be incipient; and the probability of serious progression, with adequate follow-up, will be slight. Such cases can be cared for by private physicians and public clinics, assisted by public health nurses and medical social workers. Sanatorium beds now occupied by non-infectious cases can be given over to far-advanced virulent disease which constitutes a menace to the local population. Francis J. Weber, M. D., Ohio Pub. Health, Feb., 1948.



# + Editorial +

## DELAWARE STATE MEDICAL JOURNAL

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### JUNE JOTTINGS

It has come to our attention that several members of the Society are making queries as to why the dues for the Society were raised to \$25.00 per year. We regret exceedingly that anyone should not know the reasons, for it indicates that these inquirers have taken neither the time nor trouble to read their own state medical journal. If they would read the Transactions of the House of Delegates published in THE JOURNAL of December, 1947, and the editorial published in March, 1948, they will find all their questions answered.

Several members of the Society are asking why THE JOURNAL has made no editorial comment upon the recent developments in the Wilmington Health Department. We believe that, in this present state of transition, it will be wiser to refrain from comment. When the situation clarifies itself later, as we have reasonable expectations it will do, it is possible

THE JOURNAL may have occasion to make some comment.

In the meantime, every member of the profession should give whatever assistance and advice the new authorities ask them for.

THE JOURNAL has been arriving on your desk behind schedule for some months past. Various conditions, which are in process of being altered, have been responsible. A new schedule of production has been set up which calls for the mailing of THE JOURNAL not later than the twentieth of the current month. This means that all copy must be delivered to the printers not later than the first of the current month, which in turn means that all copy to the editor must reach him by the twentieth of the preceding month, e. g., material that it is desired to have in the July issue must be in the hands of the editor not later than June 20th.

The President has appointed the following new committees: Committee on Medical Service, Drs. J. M. Barsky, chairman; L. C. McGee, A. D. King, I. J. MacCollum, and James Beebe. This committee will be concerned with such items as the Red Cross, Infantile Paralysis Foundation, Blue Cross, Blue Shield, etc., and has been appointed at the request of the A. M. A.

Another committee appointed by the President is as follows: Committee on National Emergency Medical Service, consisting of Drs. V. D. Washburn, chairman; J. M. Beck, C. L. Munson, W. F. Preston, S. H. Stradley. The functions of this committee will be to coordinate itself with the regional groups centered in Philadelphia, and the National Council on N. E. M. S. at Chicago in planning complete civilian medical services in the event of a calamity.

Finally, the President has appointed a local Committee on Arrangements, consisting of Drs. James Beebe, chairman; E. L. Stambaugh and L. M. Dobson, whose duties will be to assist in the planning of arrangements and accommodations for the 159th Annual Session of the Medical Society of Delaware to be held at Rehoboth, September 13-15, 1948.

## AMERICAN MEDICINE AND THE POLITICAL SCENE

MARJORIE SHEARON, Ph. D.,

Washington, D. C.

### Picture Presented of Coordinated Efforts of Forces Working for Nationalization

Senator Donnell was particularly interested in the certificate of incorporation of the National Health Assembly. He also raised a number of questions about the financial backers of NHA, Inc. These were: American Cancer Society, American Red Cross, National Foundation for Infantile Paralysis, and three organizations which have long been active in financing the nationalization activities of Michael M. Davis and of his lobbying organization, the Committee for the Nation's Health. (An officer of the American Cancer Society, I understand, has denied that that organization made such a contribution. However, Oscar Ewing, himself, stated the American Cancer Society contributed and Donald Kingsley, Assistant Administrator of FSA, so testified at the Senate Appropriations Hearings. Finally, Cornelius A. Wood, Jr., Treasurer of the NHA, Inc., verified the fact this week.) The other three donors were: the Milbank Fund, the Albert and Mary Lasker Foundation, and the Adele R. (Rosenwald) Levy Fund.

It seemed important to me to bring together at a single Senate hearing these various events which reflect the many fronts along which the forces for nationalization are moving, and at the same time to show how the House is trying to curb FSA officials by cutting their appropriations. By coordinating this information it was possible to show how the Committee for the Nation's Health is working with Nelson Cruikshank of the AFL, with Harry J. Becker, formerly of the FSA and now of the United Automobile Workers of America, and with members of the Physicians Forum, Inc. All these groups in turn are working with officials in the Federal Government.

### Physicians Forum Lobby Reveals Its Hand In New York

In the May 28, 1948, issue of *Counterattack*, a weekly letter published by American Business Consultants, Inc., appears this news item:

"COMMUNISTS TRY TO TAKE OVER A MEDICAL SOCIETY. Remarkable proof of Communist strength was given this week in election of officers of Medical Society of the County of N. Y. This is one of five counties that make up N. Y. City . . .

"A Communist front, the Physicians Forum, has long been active in various parts of U. S. This year it was strong enough to enter its own slate in race for officers of the medical society. What it counted on was the fact that few of the members ordinarily vote.

"The Communists would have won if the old-line group in the society hadn't roused out a big vote by accusing the Physicians Forum of wanting 'socialized medicine.' Actually the question at issue was much bigger than that of 'socialized medicine.' The question was whether Communists should get control of medical society of central borough of biggest city in U. S. Last year total vote in the election was 285. This year the Communists alone got more than four times that number. Total vote was 3,287. Old-line ticket got 2,083, Communists 1,204.

"Although most of the 1,204 doctors who voted for the Communists' tickets aren't Communists themselves, many of them are. The Communists appealed to non-Communists by capitalizing on real grievances, like discriminatory practices in medicine schools and hospitals. . . . One way to defeat Communist influence is by doing something about these grievances. When Communists get 38% of a vote among doctors, it's time to wake up."

The independent slate of physicians running for the New York County Society was as follows:

### County Medical Society Office

|                                  |                               |
|----------------------------------|-------------------------------|
| President-elect . . . . .        | Ernst P. Boas                 |
| Vice President-elect . . . . .   | Theodore Sanders              |
| Secretary . . . . .              | George D. Cannon              |
| Assistant-Secretary . . . . .    | Leo Mayer                     |
| Treasurer . . . . .              | Bernard C. Meyer              |
| Assistant-Treasurer . . . . .    | Robert W. Laidlaw             |
| Censors . . . . .                | Byard Williams, Viola Bernard |
| Chairmen of Standing Committees: |                               |
| Membership . . . . .             | J. A. P. Millet               |
| Legislation . . . . .            | Merrill P. Haas               |
| Public Relations . . . . .       | Constance Friess              |
| Medical Economics . . . . .      | Sidney M. Greenberg           |

Public Health ..... Leonard Goldwater  
Delegates ..... Lillian De Muth,  
Robert V. Sager, Leonard Goldwater,  
Ruth Foster

Four of the physicians running on the independent slate are past or present members of the executive committee of the Physicians Forum, namely:

Ernst P. Boas ..... Chairman of Forum  
George D. Cannon ..... Secretary  
Sidney M. Greenberg ..... Treasurer  
Lillian De Muth ..... Former Treasurer  
Theodore Sanders, Formerly on Exec. Com.

Three of the above four physicians were invited by Oscar Ewing to attend the National Health Assembly, Inc., namely, Doctors Boas, Greenberg, and Sanders.

This attempt of the Physicians Forum lobby to capture the New York County Medical Society indicates what may be expected in other parts of the United States.

A clearer picture may be obtained regarding the financial backing for the movement to nationalize medicine when one views the list of those who have supported the work of the Committee for the Nation's Health, Inc. Those who have contributed \$500 or more to the Committee are:

Marshall Field ..... 250 Park Ave., N. Y.  
Mary Lasker ..... 29 Beckman Pl., N. Y.  
Mrs. Max Ascoli... 23 Gramerey Pk., N. Y.  
Mrs. Lessing Rosenwald .. Jenkintown, Pa.  
Mrs. David Levy ..... New York City  
Mr. Albert D. Lasker .... New York City  
Edith R. Stern ..... 840 Union St.,  
New Orleans, La.  
Bernard Reis & Co. .... 10 E. 40th, N. Y.  
Mrs. Gardner Cowles ... 29 E. 69th, N. Y.  
Congress of Industrial Organizations  
Mr. William Rosenwald .. New York City  
Mr. Gardner Cowles Register & Tribune Co.  
Des Moines, Ia.

Mrs. David (Adele) Levy also contributed to Oscar Ewing's fund through a contribution from the Adele R. Levy Fund. Mr. and Mrs. Albert D. Lasker also contributed to Ewing's fund through a contribution from the Mary and Albert Lasker Foundation. For the past 20 years the Rosenwald money has financed Mike Davis' efforts to socialize, or rather to nationalize, medicine. Mrs. Edith R. Stern, of New Orleans, is the wife

of Edgar B. Stern, a former member of the Board of Directors of the Rosenwald Fund and a close friend of Mike Davis. Oscar Ewing invited Mrs. David Levy to serve as a member of the Executive Committee of NHA, Inc.

#### **Shearon Testimony Completed With Wealth of Documentation and Final Recommendations**

I completed my testimony on June 1 on S. 545 and S. 1320, as reported in this publication, Vol. II, No. 18. On the final day I introduced into the record a large amount of documentary material regarding the legislative history of the Wagner-Murray-Dingell bills. I shall be greatly surprised if any further attempt is made in the near future to introduce similar legislation. A different approach will be made. For the present, emphasis will be placed on the cash benefits half of compulsory sickness insurance and on the capture of medical education and medical research by the Federal Government.

In my testimony I especially urged that: (1) action be not taken on either S. 545 or S. 1320 at this session of Congress in view of our lack of knowledge of the health problems of the country; (2) a thorough study be made of national health problems and of what is now being done in the several States to bring about the better distribution of medical services before legislation relating to medical care is enacted by Congress; (3) there be a closed integration of the work of all Committees dealing with national compulsory social insurance with a view to understanding the fiscal and administrative program, especially since legislative proposals are being made on a piecemeal basis and are being considered by separate committees without regard to related proposals before other committees; (4) the administration of the several social security programs be investigated to ascertain whether or not this country should have a system of national social insurance for the entire population; and (5) the lobbies for nationalization of medicine be investigated.

On June 4 Senator Smith, for himself and Senators Ball, Donnell, Murray and Pepper, introduced S. Res. 249, which was referred to the Committee on Labor and Public Welfare.

*This is a most important resolution because*

*if enacted, it would take the two major health bills out of the political arena.* Furthermore, it would give ample time during the recess to study the Nation's health problems and to ascertain what the States themselves are doing. In addition, in the second section of the resolution there is an indication that a thorough investigation of the activities of Government agencies and of outside nongovernmental organizations should be made. For the first time there would be authorization to subpoena witnesses and records and to take testimony *under oath*. I have long contended that witnesses in this field should be compelled to testify under oath. I pointed out in my final testimony that there had been deliberate falsification by certain witnesses at these health hearings and that purposely misleading evidence, statistics, and interpretations had been introduced for the express purpose of deceiving the public and the Congress. A thorough investigation, such as would be possible under S. Res. 249, could yield invaluable information before the Eighty-first Congress convenes next January. Senator Ferguson of Michigan would be the best man to head such an investigation.

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### BOOK REVIEWS

**HERNIA - ANATOMY, ETIOLOGY, SYMPTOMS, DIAGNOSIS, DIFFERENTIAL DIAGNOSIS, PROGNOSIS, AND TREATMENT:** By Leigh F. Watson, M. D., former Assistant Professor of Surgery, University of Oklahoma. Third Edition. Pp. 732, with 323 illustrations. Cloth. Price, \$13.50. St. Louis: C. V. Mosby Company, 1948.

It is a delight to read this book—it impresses one in every chapter that it speaks with authority. The best criteria by which to judge are the chapters on internal (retroperitoneal) hernia and Littre's hernia. Our own personal experience with these, tells us Watson is correct in these most difficult areas; he does not show the ignorance and confusion that have been manifested in the writings of some of our most eminent professors. We commend him to them. This is the classical book on hernia.

**TREATMENT IN GENERAL PRACTICE:** Harry Beckman, M. D., Professor of Pharmacology, Marquette University School of Medi-

cine. Sixth edition pp. 1129. Cloth. Price, \$11.50. Philadelphia: W. B. Saunders Company, 1948.

This new Beckman continues in the patterns of its predecessors, which has proven so popular. In this edition 19 new subjects are presented. The book is more than a "treatment"; it contains also an immense amount of diagnoses. It continues to occupy the role of therapeutic supplement to the texts on medicine, most of which are deficient in the amount and specificity of the therapeutics they contain.

Such is the speed of progress, even in the therapeutic armamentarium, that Beckman plans a seventh edition in two years instead of three. His policy, since the first edition of 1930, has been to keep the book up to date. He has succeeded admirably.

**CLINICAL DIAGNOSIS BY LABORATORY METHODS: A Working Manual of Clinical Pathology.** By James Campbell Todd, M. D., Late Professor of Clinical Pathology, University of Colorado School of Medicine; Arthur Hawley Sanford, M. D., Professor of Clinical Pathology, Mayo Foundation, University of Minnesota; with the Collaboration of George Giles Stilwell, M. D., Division of Clinical Laboratories, the Mayo Clinic. Eleventh edition. Pp. 954, with 397 figures. Cloth. Price, \$7.50. Philadelphia: W. B. Saunders Company, 1948.

The eleventh edition of this standard text has been rearranged and completely revised to distinct advantages for the student and physician. In general, the format has been improved and, in part, the illustrations have been modernized. The book has become a more practical reference for use in the laboratory diagnosis of disease and continues wisely to correlate the application and interpretation of laboratory findings with the disease entity.

Few suggestions may be made. The inclusion of a few standard chemical micro-techniques would be beneficial. In bacteriology, more extensive screening certainly would have included the use of Petragnani's media and Dubos' liquid media using "twee'n" for cultivation of the tubercle bacillus, and certainly could have suggested the more recent and easily reproduced tube dilution techniques for penicillin. Noticeably missing are methods for streptomycin concentration, and no mention is made of such practical routine screening methods for penicillin and streptomycin such as



Bondi's method for plate sensitivities utilizing impregnated filter discs.

ADVANCES IN MILITARY MEDICINE: The Committee on Medical Research. In two volumes. Pp. 900. Cloth. Price, \$12.50, the set. Boston: Little-Brown & Company (Atlantic Monthly Press), 1948.

This two-volume work is the fourth in the series on the history of the Office of Scientific Research and Development and describes the work of one of its subdivisions, the Committee for Medical Research. In his foreword, Alfred N. Richards, Chairman of CMR, calls this "a report to the public of advances in medicine which, although primarily designed to promote the health and welfare of our armed forces in camp or in field, cannot fail to accrue to the permanent advantage of the civilian population."

The Committee for Medical Research was established in June, 1941, by the same executive order of President Roosevelt's which set up the parent organization (the above-mentioned OSRD headed by Dr. Vannevar Bush) under which it functioned. Nearly 1700 doctors and 3800 scientifically trained researchers were associated with CMR. The Committee was divided into 6 sections: Medicine, Surgery, Physiology, Chemistry, Aviation Medicine and Malaria. ADVANCES IN MILITARY MEDICINE is likewise divided into corresponding sections with an additional chapter on penicillin. The Medicine section is edited by Dr. E. Cowles Andrus, Johns Hopkins Hospital; Surgery by Dr. John S. Lockwood, Columbia; Aviation Medicine by Dr. Detlev W. Bronk, University of Pennsylvania; Physiology by Dr. Joseph T. Wearn, Western Reserve; Chemistry by Dr. Milton C. Winternitz of Yale; Malaria by Dr. George A. Carden, Jr., of Columbia, Penicillin by Dr. Chester S. Keefer, Massachusetts Memorial Hospitals.

These volumes present, rather drably and tediously the story of war researches whose effects are now beginning to be felt in civilian life; researches whose effects are much more interesting than their recital.

HISTORY OF THE MEDICAL SOCIETY OF THE COUNTY OF WESTCHESTER: By Laurence D. Redway. 1797-1947. Pp. 193. Cloth.

White Plains, N. Y.: Medical Society of the County of Westchester, 1948.

This is a very interesting story, typical of the earlier county societies, with their ups and downs, but always with that needed leader emerging at the right time. The present book, rich in quotations from early 19th century records and newspapers, represents a phase of medical historical literature that should be encouraged in every medical community.

TWENTY-FIRST ANNIVERSARY YEAR OF HAROFÉ HAIURI (The Hebrew Medical Journal). Volume 1, 1948. This volume under the editorship of Moses Einhorn, M. D., is not confined to technical medical topics but is divided into several sections covering a variety of subjects.

The founders had faith in the vitality and growth of modern Hebrew and foresaw that a Hebrew medical publication would be of service to the future medical department of the Hebrew University and of great value in the development and advancement of Hebrew medical literature.

The section on Palestine and Health contains an article by A. Klopstock, M. D., which discusses the high incidence of amoebiasis in Palestine. Included also is the significant study of Mental Health in Palestine by A. H. Merzbach, M. D., and a survey of the Present Urological Conditions in Palestine by W. Boss, M. D. Dr. M. Buchman describes the history of the Hot Springs of Tiberias and presents a full analysis of their therapeutic value.

In the section on Historical Medicine, Dr. M. Gelber reviews the contribution of the Jewish doctors in Poland during the eighteenth century. The section on Personalalia contains a biographical sketch of Dr. I. Seth Hirsch, and his contributions to the field of radiology.

The original articles are summarized in English to make them available to those who are unable to read Hebrew.

It is well known that the incidence and severity of illness are greater among the urban poor than among the more prosperous groups. Ignorance is a factor in promoting high sickness rates, but ignorance is in part a result of poverty. Medicine in the Changing Order, Rep. New York Academy Med. Comm., The Commonwealth Fund, 1947.

# 1789—MEDICAL SOCIETY OF DELAWARE—1948

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 C. L. MUNSON, *President-elect*  
 L. W. ANDERSON, *Vice-President*  
 D. D. BURCH, *Secretary*  
 CHARLES LEVY, *Treasurer*  
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*Board of Censors:* N. W. Voss 1948, C. L. Hudiburg 1949, C. L. Munson 1950, J. M. Messick 1951, I. M. Flinn, Jr. 1952.  
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*Necrology Committee:* Charles Maroney, I. Charamella, S. W. Rennie.  
*Auditing Committee:* F. S. Skura, A. G. Gluckman, E. G. Laird.  
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*Alternates (1948):* G. M. Boines, Italo Charamella, D. M. Gay, L. S. Hayes, A. J. Heather, A. D. King, E. T. O'Donnell, M. B. Pennington, F. P. Rovitti, O. N. Stern.  
*Delegates (1949):* L. W. Anderson, W. E. Bird, L. B. Flinn, G. W. K. Forrest, J. F. Hynes, L. J. Jones, E. G. Laird, L. C. McGee, Roger Murray, J. D. Niles, V. D. Washburn.  
*Alternates (1949):* E. M. Bohan, I. M. Flinn, Jr., A. D. King, C. E. Maroney, E. T. O'Donnell, W. M. Pierson, D. J. Preston, W. T. Reardon, J. A. Shapiro, O. N. Stern, J. W. Urie.

## KENT COUNTY MEDICAL SOCIETY

*Meets First Wednesday*  
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 S. M. D. MARSHALL, *Vice-President*, Milford.  
 STANLEY WORDEN, *Secretary-Treasurer*, Dover.  
*Delegates:* I. J. MacCollum, Wm. Marshall, Jr.  
*Alternate:* J. S. McDaniel.

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 B. M. ALLEN, *First Vice-President*.  
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 Wallace M. Johnson.

## SUSSEX COUNTY MEDICAL SOCIETY

*Meets Second Thursday*  
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 LESLIE M. DOBSON, *Secretary-Treasurer*, Milford.  
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*Alternates:* V. A. Hudson, J. L. Fox, G. W. M. VanValkenburgh, E. L. Stambaugh.

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